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Fumio Tamura

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DRINKER BIDDLE & REATH (DC)
1500 K STREET, N.W.
SUITE 1100
WASHINGTON, DC 20005-1209

EXAMINER

WOZNIAK, JAMES S

ART UNIT

PAPER NUMBER

2626

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,584

Applicant(s)

TAMURA, FUMIO

Examiner

James S. Wozniak

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the office action from 1/24/2006, the applicant has submitted an amendment, filed 4/18/2006, amending the specification, abstract, drawings, and claims without adding new matter, while arguing to traverse the art rejection based on the limitation regarding a plurality of speech recognition dictionaries corresponding to a plurality of number regions (*Amendment, Page 13*). Applicant's arguments have been fully considered, however the previous rejection is maintained due to the reasons listed below in the response to arguments.
2. In response to the amended specification, abstract, drawings, and claims, the examiner has withdrawn the previous rejection directed towards the improper use of the term "voice recognition."
3. Due to a typographical error, the patent number of Waldman (*U.S. Patent: 5,157,719-listed correctly on Page 9 of the Amendment*) was incorrectly listed as 5,517,719. This error was noted by the examiner in a previous telephone conversation with the applicant's representative and has been corrected in the below rejection.
4. The applicant has not officially challenged the official notice taken with respect to Claims 2-3 and 9-15 regarding the use of suburb and city codes and the step of storing a phone

number in a table thereby making such teachings the applicant's admitted prior art (AAPA) (*See MPEP 2144.03 C*).

Response to Arguments

5. Applicant's arguments have been fully considered but they are not persuasive for the following reasons:

With respect to the independent claims, the applicant argues that Waldman (*U.S. Patent: 5,517,719*) fails to teach a plurality of speech recognition dictionaries in the manner described in the independent claims (*Amendment, Page 13*). In response, the examiner notes that it is the combination of the teachings of Brems et al (*U.S. Patent: 5,566,272*) and Waldman that discloses the aforementioned claim limitation.

Brems discloses a method and system for the automatic speech recognition of a digit string that is divided into an area code and a 7-digit number by comparing input speech to stored speech samples (Col. 4, Lines 14-56). Although Brems discloses separate recognition of area codes and 7-digit number sequences, Brems does not explicitly teach that digit codes are stored separately in memory (plurality of dictionaries), Waldman however, discloses a means for dividing telephone number sequences into stored sub-groups (*Col. 4, Lines 46-61*) and additionally recites separate memory modules (*number dictionaries*) for storing area codes and 7-digit numbers (*Col. 6, Lines 11-16; Col. 9, Lines 4-32, and Col. 17, Lines 20-68*). Adding the separate number memories taught by Waldman to the separate area code and 7-digit telephone number speech samples disclosed by Brems would result in a plurality of speech recognition

Art Unit: 2626

dictionaries containing area codes and 7 digit telephone numbers, as is required by the presently claimed invention. Therefore, since the combination of the teachings of Brems and Waldman discloses a plurality of speech recognition sample dictionaries corresponding to digit string subgroups, the independent claims remain rejected.

The dependent claims are argued as further limiting rejected independent claims (*Amendment, Page 13*), and thus, also remain rejected.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brems et al (*U.S. Patent: 5,566,272*) in view of Waldman (*U.S. Patent: 5,157,719*).

With respect to **Claims 1 and 8**, Brems discloses:

An audio recognition method and device for a sequence of numbers having a plurality of regions dividable in meaning (*recognizing a telephone number comprising an area code and 7 digit number, Col. 4, Lines 14-56*), comprising the steps of:

Continuously carrying out an audio recognition (*automatic speech recognition, Col. 3, Lines 61-65*).

Although Brems teaches storing recognition data within a single database (*Col. 5, Lines 48-52*), Brems does not specifically suggest:

Connecting a plurality of voice recognition dictionaries with each other, the plurality of voice recognition dictionaries corresponding to the plurality of regions, respectively (*dividing phone numbers within a memory into subgroups according to line access digit, area code, and a 7 digit local number, Col. 4, Lines 46-61, and voice recognition compatibility, Col. 18, Lines 46-50*);

Brems and Waldman are analogous art because they are from a similar field of endeavor in speech-enabled dialing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to combine the means of subdividing phone numbers within a database according to a line access digit, area code, and local number as taught by Waldman with the speech enabled dialing method utilizing ASR as taught by Brems to provide for more efficient and reliable voice dialing by offering a means of ensuring that individual digit groups are correct before dialing a number and automatically dialing an area code upon verification (*Waldman, Col. 1, Lines 54-62*). Therefore, it would have been obvious to combine Waldman with Brems for the benefit of obtaining a more efficient and reliable voice dialing system through the use of multiple digit groups stored in a recognition database.

8. **Claims 2, 9, 10, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brems et al (*U.S. Patent: 5,566,272*) in view of Waldman (*U.S. Patent: 5,157,719*), and further in view of the applicant's admitted prior art (*AAPA, see section 4 above*).

With respect to **Claim 2**, Waldman further discloses:

The sequence of numbers is a telephone number including a suburb code number, a city code number and a subscriber's number as the regions (telephone number subgroups, Col. 4, Lines 46-61).

Although Waldman does not teach specific suburb and city code groups, the examiner takes official notice that this particular type of phone number parsing according to suburb, city, and local numbers is a well known means of expressing a phone number in countries such as Japan. Therefore, utilizing the same functionality of dividing a telephone number into subgroups as taught by Waldman, it is the applicant's admitted prior art to parse an audio representation of a phone number according to suburb, city, and local digits to increase method compatibility.

Claim 9 contains subject matter similar to Claims 1 and 2, and thus is rejected for the same reasons.

With respect to **Claims 10 and 11**, Brems in view of Waldman teaches the speech-enabled control method utilizing digit subgroups and capable of recognizing a numerical sequence, such as a phone number, through ASR, as applied to Claim 2. Although Brems in view of Waldman does not specifically suggest storing a phone number in a table, it is the applicant's admitted prior art that it is well known in the art to store partitioned numerical data in a table to provide an efficient means of data access. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to store segmented phone number data in a table format in order to provide efficient data access.

9. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brems et al in view of Waldman, further in view of Baker et al (*U.S. Patent: 6,539,098*), and further in view of the AAPA (see, section 4 above).

With respect to **Claim 3**, Brems in view of Waldman teaches the voice dialing method utilizing digit subgroups, as applied to Claim 1. Brems in view of Waldman does not specifically suggest method usage with a postal code comprising a city, ward, and area number, however Baker suggests:

The sequence of numbers is a postal code including a city number, a ward number and an area number as the regions (speech recognition of a postal code, Col. 9, Lines 41-52).

Brems, Waldman, and Baker are analogous art because they are from a similar field of endeavor in speech-controlled systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to combine the means of postal code identification using speech recognition as taught by Baker with the voice dialing method utilizing digit subgroups as taught by Brems in view of Waldman to increase method usability by implementing the method of digit segmentation taught by Waldman in a postal code recognition application to ensure postal code accuracy. Also, it is the applicant's admitted prior art that a postal code representation comprising a city, ward, and area number is a well-known means of expressing a postal code in countries such as Japan. Thus, to provide increased method compatibility, it would have been obvious to parse a zip code according to such a representation. Therefore, it would have been obvious to combine Baker with Brems in view of Waldman for the benefit of increasing method compatibility.

10. **Claims 4-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brems et al in view of Waldman, and further in view of Attwater et al (*U.S. Patent: 5,940,793*).

With respect to **Claim 4**, Brems in view of Waldman teaches the speech-enabled dialing method utilizing digit subgroups and capable of recognizing a numerical sequence through ASR, as applied to Claim 1. Brems in view of Waldman does not teach the use of three dictionaries for dividing a sequence of numbers and the associated recognition process utilizing the dictionaries, however Attwater discloses:

Preparing a first, second and third dictionaries (*town, road, and name recognition sets, Fig. 1, Elements, 6-8*);

Analyzing the sequence of pronounced by voice with reference to the first, second and third dictionaries to determine the successful recognition of the first, second and the third region in order (*recognizing a town, road, and name in sequence, Col. 6, Lines 28-67*);

a) Unless the third region is successfully recognized,

Preparing the third dictionary, receiving the third region in the sequence pronounced by voice, and analyzing the third region therein with reference to the third dictionary (*compiling a name list for speech recognition based on a selected road, Col. 6, Lines 53-67*); and

b) Unless the second and third regions are recognized, preparing the second and third dictionaries; receiving the second and third regions in the sequence of the numbers pronounced by voice, and analyzing the second and third regions with reference to the second and third dictionary (*compiling a road list based upon a selected town and a name list based on a selected road for speech recognition, Col. 6, Lines 42-67*).

Brems, Waldman, and Attwater are analogous art because they are from a similar field of endeavor in speech-controlled systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to combine the use of three vocabulary lists for speech recognition as taught by Attwater with the speech-enabled dialing method capable of recognizing a numerical sequence through ASR as taught by Brems in order to provide more reliable speech recognition processing by individually recognizing numerical categories (for example, area code) and compiling a word list for only the acceptable choices for a particular category based on the preceding selection, thus eliminating consideration of an invalid sequence. Therefore, it would have been obvious to combine Attwater with Brems in view of Waldman for the benefit of obtaining a more reliable speech recognition method through the use of interdependent recognition dictionaries.

With respect to **Claim 5**, Attwater further discloses:

The first dictionary corresponds to the first region; the second dictionary corresponds to the second region depending on the first region; and the third dictionary corresponds to the third region (*first, second, and third data fields corresponding to town, road, and name dictionaries, Col. 6, Lines 28-67, and Fig. 1, Elements, 6-8*).

11. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brems et al in view of Waldman, further in view of Attwater et al (*U.S. Patent: 5,940,793*) and further in view of the AAPA (see, section 4 above).

Claim 6 contains subject matter similar to Claim 2, and thus, is rejected for the same reasons.

12. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Brems et al in view of Waldman, in view of Attwater et al, in view of the AAPA (see section 4 above), and in further view of Baker et al.

Claim 7 contains subject matter similar to Claims 3 and 4, and thus, is rejected for the same reasons.

13. **Claims 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brems et al in view of Waldman, in view of the AAPA (see, section 4 above), and further in view of Attwater et al (*U.S. Patent: 5,940,793*).

With respect to **Claims 12 and 13**, Brems in view of Waldman teaches the speech-enabled control method utilizing digit subgroups stored in a table and capable of recognizing a numerical sequence, such as a phone number, through ASR, as applied to Claims 10 and 11. Furthermore, Attwater teaches the means of creating an acceptable word list for recognition based on a previous field result, as applied to Claim 4. Therefore, it would have been obvious to combine the ability to create a list of words based on a previous recognition result as taught by Attwater with the phone number recognition method taught by Brems in view of Waldman in order to provide more reliable phone number recognition processing by individually recognizing numerical categories (for example, a suburb code as noted with respect to Claim 2) and compiling a word list for only the acceptable choices for a current category based on the

Art Unit: 2626

preceding selection, thus eliminating consideration of an invalid sequence. Therefore, it would have been obvious to combine Attwater with Brems in view of Waldman for the benefit of obtaining a more reliable speech recognition method through the use of interdependent recognition dictionaries.

Claims 14 and 15 contain subject matter similar to Claims 2, 12, and 13, and thus are rejected for the same reasons.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Odaka et al (*U.S. Patent: 5,675,632*)- teaches a method for applying speech recognition to Japanese-format phone numbers.


Veschi (*U.S. Patent: 6,298,131*)- discloses a speech recognition memory comprising separate area code and local number portions.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached at (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
6/8/2006


DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2626